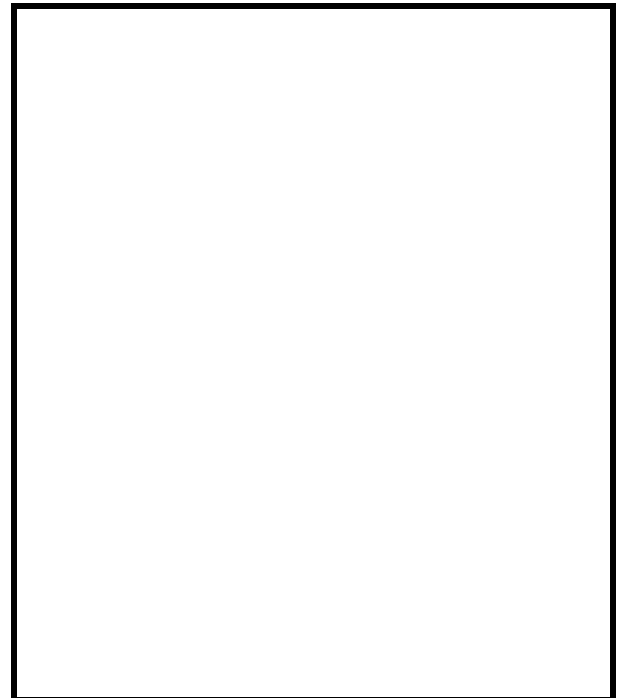


WR 848 OCS-G-20403 #1 (Hal)

22" Casing	
Water Depth, Ft:	7739
Hole Size, in.:	28
22" Casing OD, in.:	22
22" Casing ID, in.:	20
22" Shoe Depth:	11000
36" Casing ID:	34
36" Shoe Depth, Ft:	8023
Capacity open hole x 22", bbls/ft:	0.2915
Capacity 36" Csg x 22", bbls/ft:	0.6531
Capacity 22" Casing, bbls/ft:	0.3887
Length open hole x 22", ft	2977
Length 36" casing x 22", ft	284
Length shoe Track, ft	30
Volume 26" hole x 22", bbls	867.9
Volume 36" casing x 22", bbls	185.5
Volume shoe Track, bbls	11.7
Total Volume, bbls	1065.1
Total Volume, cu. Ft.	5980

13-5/8" Casing	
Hole Size, in.:	17.5
13 5/8" Casing OD	13.625
13 5/8" Casing ID	12.25
13-5/8" Shoe Depth:	22500
TOC	21300
Capacity open hole x 13 5/8", bbls/ft:	0.1172
Capacity 13 5/8" Casing, bbls/ft:	0.1458
Length open hole x 13 5/8", ft	1200
Length shoe Track, ft	80
Volume open hole x 13 5/8", bbls	140.7
Volume shoe Track, bbls	11.7
Total Volume, bbls	152.3
Total Volume, cu. Ft.	855

11-7/8" Liner	
Hole Size, in.:	14.75
11-7/8" Casing OD	11.875
11-7/8" Casing ID	10.711
11-7/8" Shoe Depth:	23600
TOC	22200
13-5/8" Shoe Depth, Ft:	22500
Capacity open hole x 11 7/8", bbls/ft:	0.0744
Capacity 13-5/8" x 11 7/8", bbls/ft:	0.0088
Capacity 11 7/8" Casing, bbls/ft:	0.1115
Length open hole x 11 7/8", ft	1100
Length 13-5/8" x 11 7/8", ft	300
Length shoe Track, ft	80
Volume open hole x 11 7/8", bbls	81.8
Volume 13-5/8" x 11 7/8", bbls	2.6
Volume shoe Track, bbls	8.9
Total Volume, bbls	93.4
Total Volume, cu. Ft.	524



Attachment 6

Section 1 22", 224.3 ppf, X-80, RL-3M ML - 11000'
Water Depth: 7657' : RKB-MSL: 82' : RKB-ML: 7739'

Assumptions:	Kick Not To Exceed The Fracture Grad. @ The Casing Shoe W/ The Following Internal & External Fluids: 1. Frac @22" shoe & Gas from shoe to the mudline 2. Drilling Fluid F/ Surface To The Mudline 3. Seawater Backup F/ Surface To The Mudline 4. Pore Pressure Backup F/ Mudline To The Casing Shoe
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Net Burst = MASP
= 3328 psi

$$\text{Burst Safety Factor} = \text{conn burst rating} / \text{max surface pressure}$$

$$(224.3 \text{ ppf}) = 7400 / 3328 = \boxed{2.22}$$

Assumptions: External pressure due to anticipated cement weight when casing is set and seawater gradient to ML.
Internal pressure due to displacement mud weight to RKB

Collapse Safety Factor = conn collapse rating / maximum collapse pressure
(224.3 ppf) = 3876 / 767 = **5.06**

Assumptions:	Tension load due to BML measured depth length of casing Bouyancy resulting from mud weight in use when casing is run 100 kips allowable overpull
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Tension SF, 224.3 ppf (Conn) = conn tensile rating / max tension load
= 2451000 / 727589 = **3.37**

OCS-G 20403 No 1 (Hal)
Walker Ridge 848
CASING DESIGN CRITERIA

Attachment 6

13-5/8" Protective Casing

Section 1 : 13-5/8", 88.2 ppf, Q125 SLX F/ ML - 22,500' TVD-RKB (14,761' BML)

Next hole section TD: 23,600' (50% Depth @ 11,800')

Water Depth : 7,657' : RKB-MSL : 82' : RKB-ML : 7,739'

Burst Calculation

Assumptions:

- Bottom hole pressure @section TD & (50% gas) / (50% mud) replacement to surface
- Drilling fluid from surface to the mudline
- Seawater backup from surface to the mudline
- Pore Pressure Backup F/ Mudline To The Casing Shoe

Note: MASP is calculated at the Mudline

MAASP = 3689 (F/ MASP Calculation Sheet)

(Section 1) Net Burst = MASP
(Section 1) = **3689 psi**

Burst Safety Factor = pipe and connection burst rating / max surface pressure
(Section 1) = 10030 / 3689 = **2.72**

Collapse Calculation

Assumptions: External pressure due to Mud Weight when casing is set and seawater gradient to ML.
Internal pressure equal to seawater gradient to the mudline and MW to the casing shoe.

Max Collapse Pressure = (MW Inside-MW Outside)*(0.052)*(TVD length BML)
(13.3-11.0)*(0.052)*(22,500-7739)
= **1228 psi**

Collapse Safety Factor = pipe collapse rating / max surface pressure
= 2880 / 1228 = **2.35**

Tension Calculation

Assumptions: Tension load due to BML measured depth length of casing.
Buoyancy resulting from mud weight in use when casing is run.
100 kips allowable overpull.

Maximum Tension Load = (Length of casing)(casing wt/ft)(bouyancy factor) + overpull
(Section 1) = [(22500-7739)(88.2)*[1-(11.0/65.5)] + 100,000
= **1,183,277**

Tension SF, connection = conn. tensile rating / max tension load
(Section 1) = 2633000 / 1183277 = **2.2**

OCS-G 20403 No 1 (Hal)
Walker Ridge 848
CASING DESIGN CRITERIA

Attachment 6

11-7/8" Protective Liner

Section 1 : 13-5/8", 88.2 ppf, Q125 SLX F/ ML - 22,500' TVD-RKB (14,761' BML)
Section 2 : 11-7/8", 71.8 ppf, P110 SLX F/ 22,200' - 23,600' TVD-RKB (1200' BML)
Next hole section TD: 30,000' (50% Depth @15,000')
Water Depth : 7,316' : RKB-MSL : 76' : RKB-ML : 7,392'

Burst Calculation

Assumptions:

- Bottom hole pressure @section TD & (50% gas) / (50% mud) replacement to surface
- Drilling fluid from surface to the mudline
- Seawater backup from surface to the mudline
- Pore Pressure Backup F/ Mudline To The Casing Shoe

Note: MASP is calculated at the Mudline

MAASP = 4738 (F/ MASP Calculation Sheet)

(Section 1) Net Burst = MASP
(@ML) = **4738 psi**

(Section 2) Net Burst = MASP + SW backup @ML + Internal Fluid Gradient(Drilling Fluid MW & Gas)
(@22800) -External Pore Pressure Backup F/ Mudline To The Liner Top (Lowest PP F/ Previous Shoe)
= 4738 + (0.052)*(8.6)*(7657) + (15,000-7739)*0.122 + (0.052)*(14.0)*(22,200-15,000)
- (0.052)*(11.0)*(22,200)
= **1628 psi**

Burst Safety Factor = pipe and connection burst rating / max surface pressure

(Section 1) = 10030 / 4738 = **2.12**

Burst Safety Factor = pipe and connection burst rating / max surface pressure

(Section 3) = 9430 / 1628 = **5.79**

Collapse Calculation

Assumptions: External pressure due to Mud Weight when casing is set and seawater gradient to ML.
Internal pressure equal to seawater gradient to the mudline and MW to the casing shoe.

Max Collapse Pressure = (MW Inside-MW Outside)(0.052)(TVD length BML)
= (14.-13.3)(0.052)(23,600-7739)
= **577 psi**

Collapse Safety Factor = pipe collapse rating / max surface pressure

= 2880 / 577 = **4.99**

Tension Calculation

Assumptions: Tension load due to BML measured depth length of casing.
Buoyancy resulting from mud weight in use when casing is run.
100 kips allowable overpull.

Maximum Tension Load = (Length of casing)(casing wt/ft)(bouyancy factor) + overpull
(Section 2) = [(23,600-22,500)(71.8)][1-(13.0/65.5)] + 100,000
= **162340**

Tension SF, connection = conn. tensile rating / max tension load

(Section 2) = 1868000 / 162340 = **11.5**

OCS-G 20403 No 1 (Hal)
Walker Ridge 848
Requested Test Pressures

Test Pressure = Lesser of
 1) Maximum Anticipated Surface Pressure adjusted for hydrostatic of test fluid used, or
 2) Internal pressure based on the LOT of the bottom most casing shoe (11-7/8" @23,600'), or
 3) 70% of rated burst pressure of weakest casing section adjusted for difference in hydrostatic and pore pressures.

22" Conductor

Test Pressure = MASP + SW backup @ML - (riser MW)(0.052)(depth RKB to ML),
 = $3328 + (0.052) * (8.6) * (7657) - (9.5)(0.052)(7739)$
 = **2929 psi**, or
 2) = $\{(\text{Max expected LOT} + 1 \text{ ppg}) - (\text{riser MW}, 10 \text{ ppg})\}(0.052)(\text{TVD shoe})$
 = $((12.5 + 1.0) - 10.0)(0.052)(11000)$
 = **2002 psi**, or
 3) = $(0.70)(6691) - (9.5-8.6)(0.052)(11000)$
 = **4169 psi**
Use 3000 psi

13 5/8" Protective

Test Pressure = MASP + SW backup @ML - (riser MW)(0.052)(depth RKB to ML),
 = $3689 + (0.052) * (8.6) * (7657) - (11.0)(0.052)(7739)$
 = **5134 psi**, or
 2) = $((\text{LOT @22500}') - (\text{riser MW}))(0.052)(22,500)$
 = $(13.7-11.0)(0.052)(22,500)$
 = **3159 psi**, or
 3) = $(0.70)(8410) - (11.2-11.0)(0.052)(22,500)$
 = **5653 psi**
Use 3500 psi

11 7/8" Prot. liner

Test Pressure (liner) = MASP + SW backup @ML - (riser MW)(0.052)(depth RKB to ML),
 = $4738 + (0.052) * (8.6) * (7657) - (13.3)(0.052)(7739)$
 = **2810 psi**, or
 2) = $((\text{LOT @23600}') - (\text{riser MW}))(0.052)(23600)$
 = $(14.8-13.3)(0.052)(23,600)$
 = **1841 psi**, or
 3) = $(0.70)(8410) - (14.0-13.3)(0.052)(23600)$
 = **5057 psi**
Use 3500 psi

Attach

[illegible]